RESOURCE MANAGEMENT

Khutzeymateen Study Report

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Forest Service
Ministry of Environment, Lands and Parks

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Khutzeymateen project report

Contents

1.0 Introduction 1

2.0 Background 1
- 2.1 Physical setting 1
- 2.2 History of use 2
- 2.3 Land-use conflicts 3

3.0 Khutzeymateen project 3
- 3.1 Project design 3
- 3.2 Forestry 4
- 3.3 Mapping 4
- 3.4 Fisheries study 5
- 3.5 Grizzly bear study 5

4.0 Evaluation of timber harvesting 7
- 4.1 Modified, conventional timber harvesting scenario 7

5.0 Conclusion 9

Appendix 1 10

Khutzeymateen project report

1.0 Introduction

The Khutzeymateen project was established in 1988 by the Minister of Forests and the Minister of Environment, Lands and Parks[1] to determine the impact of timber harvesting in the area on grizzly bears.

The project was cooperatively funded, directed and administered by personnel from both ministries.

This report summarizes and discusses results from all components of the Khutzeymateen project and evaluates the impact of timber harvesting on grizzly bears.

The report ends by presenting the conclusions of the project steering and management committees.

More detailed study results are available to interested members of the public.

Appendix 1 contains a list of documents that have been used in the preparation of this report and states where copies can be obtained.

2.0 Background

2.1 Physical setting

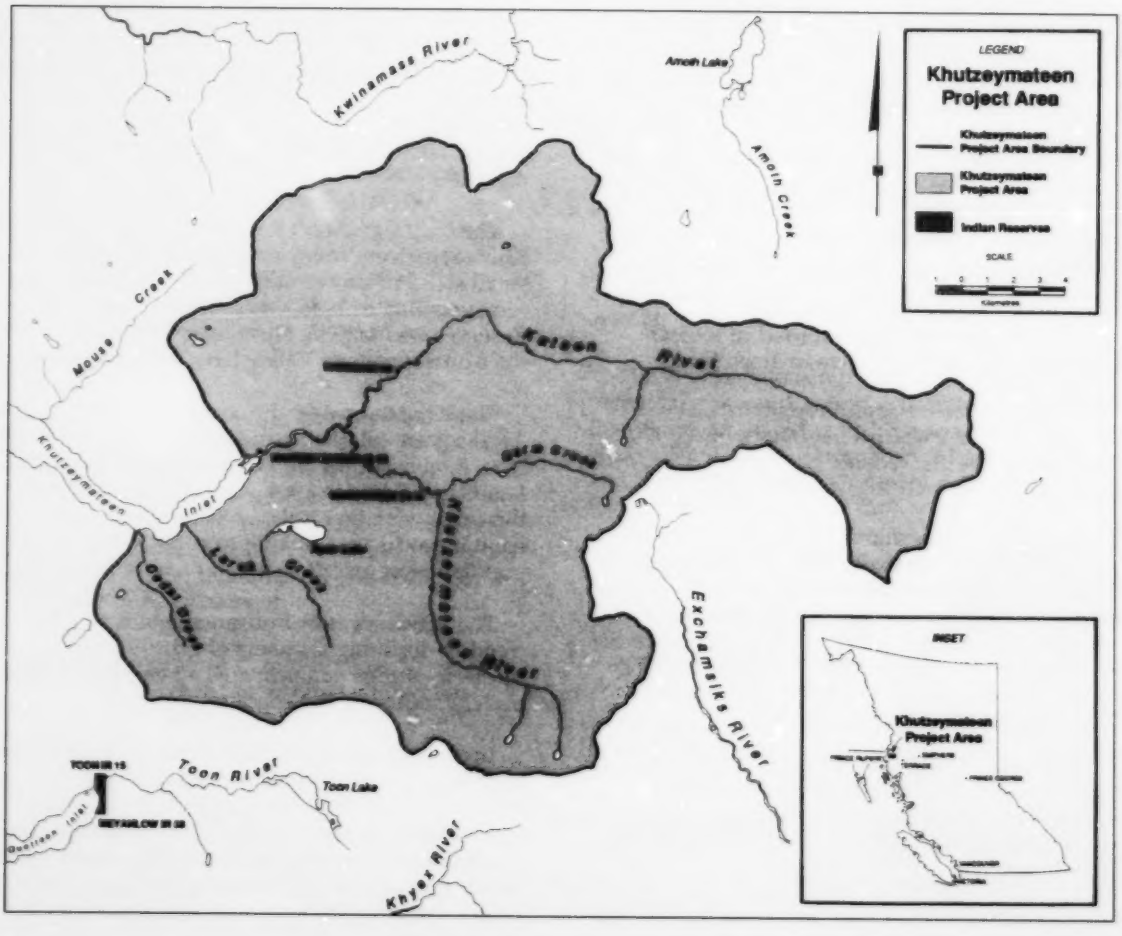
The Khutzeymateen project area is 45 kilometres northeast of Prince Rupert at the head of Khutzeymateen Inlet (see map below). The area, covering approximately 443 square kilometres, includes the Khutzeymateen River and its drainages, and Larch and Cedar Creeks,

The area is in the Western Kitimat Range of the Coast Mountains.

Topography is rugged with elevations ranging from sea level to over 2,100 metres.

Major terrain units include a large estuary, level fluvial areas (floodplain), extensive upslope units

[1] Because of recent administrative changes, all references to government agencies are in their current name.



with very shallow soils over bedrock, numerous avalanche tracks, organic bogs, and several colluvial and alluvial fans.

The climate is wet, mild and oceanic.

Temperatures vary little throughout the year; the mean annual temperature is 7 Celsius; the mean temperature of the warmest month is 16.1 Celsius; and the mean temperature of the coldest month is -3.1 Celsius.

Mean annual precipitation is 304 centimetres of which approximately 12 per cent is snow (mean annual snowfall is 356 centimetres).

Although winter conditions are not usually extreme, outflow winds can freeze the upper Khutzeymateen Inlet.

The wind hazard is particularly high in the Khutzeymateen Valley. Windfall damage in the lower valley has been caused by winds blowing in from the Pacific Ocean. The upper valleys have windfalls associated with cold air outflow from the interior.

The Khutzeymateen River system supports all native species of anadromous salmonids and important runs of chinook, coho, chum and pink salmon, and steelhead. Resident Dolly Varden char have been reported upstream of anadromous limits.

Approximately 50 grizzly bears frequent this rich area on an annual basis, along with a variety of other wildlife including black bears, mountain goats, marmots, beavers, wolves, wolverine, otters, seals, and whales.

Porcupines are present in the valley. Significant porcupine damage has been recorded in second-growth stands along the Khutzeymateen Inlet.

The watershed also supports songbirds, waterfowl, raptors, owls, grouse, shore birds, hummingbirds, swifts, woodpeckers, and kingfishers.

Stands of western hemlock are abundant on the slopes of the Khutzeymateen Valley. Adjacent to the rivers and on the surrounding flat lands are tall stands of Sitka spruce and western hemlock.

Dominant undergrowth species of salmonberry, sword fern, devil's club, elderberry, and skunk cabbage are also on these bottom lands.

Forest stands throughout the study area exhibit a degree of irregularity marked by openness in the canopy and trees of differing size and age. This structure a measure of protection against wind, ice, and snow damage.

Administratively, the study area is within Management Unit 6-14 of Ministry of Environment, Lands and Parks' Region 6, and the North Coast forest district of the Ministry of Forests' Prince Rupert forest region.

2.2 History of use

The Khutzeymateen Valley is within the territory of the Gitsees, a Coast Tsimshian-speaking tribe. Archival records indicate that the area was at one time used by Tlingit natives now resident in Alaska. The means by which the area came into the control of the Gitsees is unknown.

Early in this century, the Gitsees attempted to secure lands in the Khutzeymateen Valley through the Royal Commission on Indian Affairs. In 1916, the Royal Commission approved three of nine applications by the Gitsees for reserve lands in the Khutzeymateen Valley.

Historical records indicate that the Khutzeymateen Valley was used by Gitsees people for fishing, hunting, trapping, gardening, and gathering wild plant food. Various species of fish, particularly coho, were taken with nets and dried in smokehouses near the mouth of the river. The primary animals hunted were mountain goats, seals, and black bears. Large potato crops were harvested near the mouth of the river. Crabapples and various types of berries were important crops, while the bark of hemlock trees was harvested for food and medicine. Houses, smokehouses, and shelters were built using local materials.

The only significant timber harvesting in the Khutzeymateen Valley occurred in 1950, when a small stand of timber adjacent to the estuary was removed and, in 1956, when one of the Indian Reserves was logged. Further timber cutting rights in the Khutzeymateen Valley have not been issued.

The Khutzeymateen Project area is the core of a 3,850-square-kilometre, coastal, grizzly bear kill-free zone established by the Ministry of Environment, Lands and Parks in 1984. The criteria in establishing this zone were that it was sufficiently large and the habitat productive enough to support a viable population of grizzly bears.

The zone serves as insurance against the present trend of declining numbers of grizzly bears throughout their range and as a benchmark for better understanding of the species.

In recent years the Khutzeymateen Valley has become a recreation destination.

In a recent inventory of wildlife viewing sites, the Khutzeymateen Valley was identified as one of 51 choice sites in the province. As well, the Khutzeymateen Valley can be developed into a

successful adventure tourism operation in north western British Columbia.

The majority of the recreational use is wildlife viewing tours in May and early June conducted on the estuary and the lower Khutzeymateen River as far as the Kateen junction. There is also some sport fishing along the Khutzeymateen River in the summer.

Professional photographers, mainly film crews, also spend a relatively large number of person-days in the study area. Their use of the valley extends into the lower Kateen.

2.3 Land-use conflicts

The Khutzeymateen Valley has been the focus of a major resource allocation conflict since the early 1970s.

Unlike other wilderness issues in the province, the Khutzeymateen Valley controversy is primarily focused on only two major values: the valley's grizzly bears and its timber.

In 1972 the Ministry of Environment, Lands and Parks supported a proposal to preserve the valley to protect grizzly bears and their habitat. That position has remained firm since that time.

In 1986 the provincial cabinet included the Khutzeymateen Valley on the list of wilderness areas to be reviewed by the Wilderness Advisory Committee (WAC).

The WAC reviewed the interests of various resource user groups and made the following recommendations on the future status of the Khutzeymateen Valley:

"1. Timber harvesting should be permitted, provided that sufficient field studies acceptable to the Wildlife Branch of the Ministry of Environment are undertaken and their conclusions are incorporated into the timber harvesting plan. The plan should be jointly approved by the Ministry of Forests and the Ministry of Environment.

2. The forest company should assume 50 per cent of the cost of whatever wildlife studies the Wildlife Branch judges to be needed to prepare a timber harvesting plan.

3. The timber harvesting plan should include a provision for the Ministry of Environment to monitor the effects of the approved logging plan on bears and for the Ministry of Forests to adjust cutting plans, if necessary."

3.0 Khutzeymateen project

3.1 Project design

Based on the recommendations of the Wilderness Advisory Committee, the Ministry of Forests and the Ministry of Environment, Lands and Parks formally agreed, in June 1988, to conduct a cooperative study to assess the potential impact of timber harvesting in the Khutzeymateen on grizzly bears and their habitat.

It was subsequently agreed by both ministries to also assess the impacts of timber harvesting in the study area in the context of long-term management objectives for grizzly bears and timber resources in north coastal British Columbia.

Contrary to the WAC recommendation, a forest company was not requested to provide funds for the study. As well, a publicly stated position of both ministries was that timber harvesting would proceed only if a plan could be developed that would prevent unacceptable impacts on grizzly bears and their habitat.

The Khutzeymateen project consisted of a number of concurrent initiatives:
- a timber inventory;
- a road-engineering study;
- the classification and mapping of ecosystems and terrain;
- a fisheries study; and,
- a grizzly bear study.

The results of these studies were then used to assess the impact of timber harvesting in the study area on grizzly bears.

The Khutzeymateen project was directed by a management coordinating committee co-chaired by the regional fish and wildlife manager, Skeena region, Ministry of Environment, Lands and Parks, and the Forest Service's forestry manager, Prince Rupert forest region.

The management coordinating committee reported to a four person steering committee consisting of two branch directors from each of the Ministries of Forests and Environment, Lands and Parks.

As mentioned previously, the Khutzeymateen project area includes the Khutzeymateen River and its drainages as well as Larch and Cedar Creeks.

In the following document "Khutzeymateen" refers to the entire project area. Explicit reference will be made to the Khutzeymateen Valley, where appropriate.

3.2 Forestry study

Timber inventory

The purpose of the timber inventory was to check the reliability of the inventory information for development planning in the Khutzeymateen. The work was confined to the potentially merchantable types in the operable portion of the study area.

Methods

Initially, data used for the inventory analysis came from two sources:

- 73 plots came from T.M.Thompson and Associates who had done a cruise volume evaluation in the valley; and,
- 17 plots came from the Forest Service's permanent and sample plots taken in the late 1960's.

Additional cruise data collected by private interests was not made available.

The volume per hectare of the cruised data were compared to the volume estimated from forest cover maps. As well, data from the cruise plots was used to validate the species composition information on the forest cover maps.

Results and discussion

Statistically acceptable volume estimates were found for areas where hemlock was the leading species which cover approximately 65 per cent of merchantable area. Volume estimates for the spruce leading areas were unacceptable. This required additional ground sampling which improved but also failed to statistically validate the spruce leading labels.

Typically, mature spruce stands are not homogenous so individual plot volumes have high variability.

The comparison of the forest cover map labels and the cruise labels was done with the two leading species, spruce and hemlock.

There was a difference of between 20 and 30 per cent, with spruce always being over-represented in the forest cover label.

The data suggests that the present overall forest inventory volume estimates for the study area are acceptable.

In stands with both spruce and hemlock species present, the spruce volume is over-estimated while the hemlock is underestimated.

This has some implications for economic predictions because spruce is commercially more valuable than hemlock.

Road engineering

The purpose of the engineering study was to determine the locations and to estimate the costs for main road construction and major bridge crossings in the Khutzeymateen.

Methods

Preliminary and follow-up field work was conducted to determine road location and bridge crossings. A road design computer program was used to refine estimates.

Results and discussion

Shallow water and other resource values at the estuary required that a log dump be located down the south side of the Khutzeymateen Inlet west of Larch Creek.

The main road would go from the dump through rocky terrain near the shoreline for 4.7 kilometres to gain entry to the valley. One and a half kilometres of this road would be in an avalanche zone which would adversely impact road construction, utilization and maintenance.

Main road construction in the valley would be relatively easy throughout most of the project area.

Favorable construction conditions were found at the toe of the slope of the valley wall. Construction at the toe of the slope would ensure that the main road does not dissect important areas of bear habitat on the valley bottom, but would split important bedding and adjacent feeding sites. As well, if there were any slope failures associated with road construction, material would not be deposited directly into the river.

Major bridge crossings on the lower Khutzeymateen and Kateen rivers present some problems owing to the tendency for these streams to change courses. Few crossing sites are available and as such, options for avoiding conflicts with other resources are limited.

3.3 Mapping

Ecological mapping

The purpose of the ecological mapping was to determine the abundance and distribution of distinct habitat types in the Khutzeymateen.

Methods

Biogeoclimatic zones, physical features and major vegetation types were used for the ecological mapping. Ecosystems were mapped according to their potential final (climax) stage as well as their current seral stage.

Results and discussion

Biophysical (ecological) mapping was completed for the entire study area. The mapping was done at a scale of 1:20,000 for the entire watershed and 1:10,000 for the operable landbase.

The ecological mapping was a critical component in determining the relative importance of specific habitat types to grizzly bears and assessing the impacts of development scenarios on the grizzly bear population. As well, the maps were useful for examining the range of forest management prescriptions such as reforestation, and subsequent assessments of impacts on bears.

Terrain mapping

Terrain mapping was conducted in the study area to assess slope stability and erosion potential.

Methods

Aerial photograph interpretation in association with field work was used to identify and map terrain units and geomorphic processes in the watersheds. Interpretative slope stability maps, describing mass wasting hazard and surface erosion potential, were derived from the terrain maps.

Results and discussion

Terrain maps and interpretative slope stability maps were completed at 1:50,000 for the entire study area and 1:10,000 for the operable forest land base.

There is concern for terrain stability over a large part of the area excepting the valley bottom and some of the higher plateau and bare rock areas.

The standing forest provides slope stability where thin soil has developed on bedrock. Healthy tree roots act as a mechanical attachment of the soil to bedrock. Removal of the forest in these areas would have to be carefully engineered to prevent mass wasting.

Climatic conditions, particularly high rainfall and high windspeed storms reinforce the need for caution regarding slope stability.

3.4 Fisheries study

The purpose of the fisheries study was to document the importance of the area for fish and to identify areas sensitive to timber harvesting.

Methods

Methods of investigation included aerial reconnaissance, investigation of historical records, field surveys and interpretation of aerial photographs.

Results and discussion

The Khutzeymateen River is the second most important salmon stream in the region bounded by:

- the Nass and Skeena valleys to the north and south;
- the Kitsumkalum-Tseax valley to the east; and,
- the Pacific Ocean to the west

The river has important runs of chinook, chum, coho, and pink salmon. The median escapement estimates are (with highest estimates in brackets) 750 chinooks (3,500), 3,500 chum (20,000), 1,350 coho (10,000), and 10,000 pinks (80,000).

Steelhead, Dolly Varden char, cutthroat trout, and rainbow trout are also present.

Field work documented the importance of side-channels and other refuge habitats away from the main channel for rearing salmonids, particularly coho fry, during periods of fall and spring freshet.

Critical areas of fish habitat were identified. These included:

- areas of channel instability;
- important salmonid spawning and rearing areas (side-channels, tributaries and wetlands);
- the estuary; and,
- marine foreshore zones.

This information was subsequently used, in conjunction with additional field work, to map fisheries sensitive zones.

3.5 Grizzly bear study

The purpose of the grizzly bear study was to gain knowledge about the bears and their use of the project area in order to determine if timber harvesting the valley would result in unacceptable impacts on grizzly bears and their habitat.

Methods

Grizziy bears were radio-collared and monitored over the three years of study. Trapping, incidental observations, detection at remote-controlled camera sites, and aerial surveys were used to determine population abundance.

Three main seasons of activity were identified. Basic life-history information was collected such as food habitats, movements and denning.

Aerial and ground telemetry locations were used to determine habitat use and evaluate which habitats were selected and preferred by grizzly bears on a seasonal basis.

Habitats were seasonally rated from very high to nil, based on their value for feeding, bedding and travel.

Results and discussion

The majority of intensive field research on grizzly bears was carried out in the Khutzeymateen watershed portion of the study area because it was difficult to access Larch and Cedar creeks on the ground and there were no radio-collared bears located beyond the creek's estuaries.

Capture and handling

During the project, 20 grizzly bears were fitted with radio collars (nine adult females, seven adult males, and four sub-adult males, including one two-year old).

Abundance

Sixty-four different grizzly bears (all age classes) were known to have used the study area at some time during the 1989-1991 period.

A minimum of 51 grizzly bears (including young) used the study area some time during 1991.

Seasons of activity

Three seasons of activity were defined. The start of the seasons vary somewhat from year to year, depending on food availability. The seasons are as follows:

Season 1: lasts from den emergence until berries are the major food item in the diet. During this season grizzly bears eat a variety of herbaceous plants.

Season 2: lasts from the end of season 1 until salmon becomes the major grizzly bear food item. During this season bears eat a variety of berries as well as several different forbs.

Season 3: lasts from the end of season 2 until grizzly bears enter winter dens. During this season grizzly bears primarily feed on spawning salmon and their spawned-out carcasses. In the late fall when salmon become scarce, bears also feed on a variety of forbs, especially skunk cabbage.

Food habits

Sedges were the most frequently eaten food item from late April until early July.

Skunk cabbage was eaten throughout the active period, but predominated in the diet during late June and July and again in late September and October.

Cow parsnip was common in the diet during mid to late June and July and again in late September and early October.

A variety of other plant species were eaten throughout the year.

All berry species in the Khutzeymateen were eaten by grizzly bears to various degrees, apparently depending on local and annual abundance as well as relative availability.

As well, the current growth of a number of fruiting shrubs was eaten before the berries became ripe. The berries most frequently fed on were red elderberry, devil's club, and stink currant.

Berries were primarily eaten between early July and early September.

Runs of salmon began moving into the Khutzeymateen River in late July and early August and became the major food item of grizzly bears until mid to late October.

Bears fed on freshly killed spawning salmon as well as the carcasses of spawned-out salmon.

Two occurrences of feeding on black bear were recorded, but it is not known if the black bears were killed or scavenged by grizzly bears.

One adult female and one yearling grizzly bear were fed on by other grizzly bears.

The carcasses of two winter-killed mountain goats were scavenged and two duck carcasses were found at bed sites near the Khutzeymateen estuary.

Grizzly bears were observed digging for soft-shell clams on intertidal mudflats and eating blue mussels and barnacles in the intertidal zone.

A few instances of grizzly bears feeding on insects were recorded. Rotting stumps were torn apart to feed on adult and larval ants and the larvae of ground-nesting wasps were dug up and eaten.

Movements

Although many grizzly bears use the Khutzeymateen Valley, most of these bears depend on a much broader geographic area to provide their life requisites.

Thirteen of the 20 radio-collared grizzly bears monitored over the three years of study were known to have moved from the Khutzeymateen watershed to surrounding watersheds.

Four of five females monitored for two years spent time outside of the Khutzeymateen watershed.

Ten grizzly bear dens were located within the Khutzeymateen project area, four were located in adjacent Mouse Creek, and one was located near the headwaters of the Ensheshese River.

Available information suggests that grizzly bears active in the Khutzeymateen project area during the berry and salmon seasons (seasons 2 and 3), are predominately adult females and sub-adults of both sexes.

Almost all locations of adult males in the Khutzeymateen were limited to season 1 at which time many were located or observed with adult females. This absence of adult males was especially puzzling during season 3 when bears were concentrated along salmon spawning areas.

There were numerous observations of adult females, with and without young, and subadult grizzly bears at salmon spawning areas. Apparently, while numerous adult males included the Khutzeymateen project area in their spring breeding ranges, few used the study area during seasons 2 and 3.

The reasons why adult males are present only in the spring and absent for the remainder of the year is unknown and has not been observed in other grizzly bear studies.

It appears that the Khutzeymateen Valley may play an important role in the population dynamics of grizzly bears over a much greater area.

This highlights the importance of the Khutzeymateen Valley to the regional population of grizzly bears.

Habitat use

During all seasons, grizzly bears actively selected habitats for feeding and bedding and within each season they preferred certain habitats.

The preferred habitats in all seasons were on lower slopes and valley bottoms, including both non-forested and forested habitats.

Forested habitats such as floodplain old-growth and skunk cabbage old-growth were consistently preferred in all seasons as were non-forested wetlands and estuaries.

Sidehill old-growth with high moisture and nutrient regimes and a diverse and abundant understorey, was used in all seasons and was preferred for feeding over drier sidehill old-growth.

The lower slopes of both types of sidehill old-growth were frequently used for bedding, particularly when adjacent to well-used feeding areas.

Grizzly bear habitat values (very high to nil), based on grizzly bear use and prominence values for major grizzly bear food plants, were assigned for all habitats within the Khutzeymateen Valley.

The resultant map was used to assess the impacts of forestry development in the Khutzeymateen on grizzly bears.

4.0 Evaluation of timber harvesting

Several timber harvesting scenarios were run using the information collected during the Khutzeymateen project.

The purpose of the scenarios was:
- to assess impacts on grizzly bears and their habitat; and,
- to determine their economic feasibility.

Only one timber harvesting scenario is presented here. It features a number of protective measures for important grizzly bear habitat.

Additional timber harvesting scenarios not presented here include:
- a scenario with a much greater rate of cut than was deemed inappropriate because of its impacts on grizzly bears, and;
- an innovative integrated resource management scenario that holds future promise but at present is economically infeasible.

4.1 Modified, conventional timber harvesting scenario:

A timber harvesting plan was created for the Khutzeymateen based on the following assumptions:

- rate of cut of 50,000 cubic metres/year;
- a single pass system of 20-year duration;
- provincial timber harvesting road standard - class 5 Forest Service Road - five metres running surface; and,
- primarily clearcutting with some single tree selection and clearcut helicopter timber harvesting.

In addition to the fish/forest guidelines, regularly applied to protect fisheries values, North Coast Biodiversity Planning Guidelines were applied to address the issue of maintaining biological diversity.

To protect grizzly bear values, most of the estuary was set aside along with other critical bear habitat.

For example:
- harvesting was not permitted in Carm Creek;
- the areas harvested in the lower Khutzeymateen Valley were reduced; and,
- leave strips were retained around avalanche tracks.

Impact of timber harvesting on grizzly bears

The impacts of timber harvesting in the Khutzeymateen on grizzly bears are presented as follows:

- general impacts related to forestry development;
- specific impacts from the timber harvesting scenario on grizzly bears and grizzly bear habitat; and,
- the impact of proposed road development on grizzly bear distribution and abundance.

General impacts

1. Increased human access to grizzly bear range and the subsequent killing of bears has primarly contributed to declines in grizzly bear populations throughout North America. Without strict controls, and the enforcement of same, the construction of roads into the Khutzeymateen could result in increased bear mortality from hunting, poaching, and defense-of-life.

2. Poor management of human food and garbage around camps and facilities associated with any phase of development leads to the destruction of "problem" bears. Garbage-habituated bears have low survival rates under any circumstance. Proper food and garbage management should be required everywhere.

3. Grizzly bears will be displaced from areas of human activity or habituate to that activity, and thereby reduce their probability of survival.

4. In the Khutzeymateen, the preferred and most heavily used habitats, in all seasons, were those on the lower slopes and valley bottoms. These moist and nutrient rich areas are also among the best timber-growing sites. This puts conventional timber extraction and maintenance of grizzly bear habitat in direct conflict.

5. Previous studies have demonstrated that grizzly bears appear reluctant to use new clearcuts.

   In fact, because of a variety of factors not necessarily associated with food — such as displacement and increased vulnerability to hunting and poaching — habitat quality may be reduced.

   Older clearcuts may be used but are short lived (see point 8 following).

6. Some well-used grizzly bear food species on the coast, such as many berry species, become more abundant after clearcutting.

   However, other food species that are seasonally important, such as skunk cabbage, may not respond similarly.

   Therefore, although there may be an increase in bear food during the berry season (season 2), this may be offset by a reduction of important food during the other seasons (seasons 1 and 3).

   Thus, habitat quality may be reduced by clearcutting.

7. Additional impacts on grizzly bear habitat may occur as a result of clearcutting in the valley.

   Although there would be an attempt at protecting important habitats from windthrow post-clearcutting, if windthrow were to occur, impacts would be considerably greater.

   The most likely habitats to experience windthrow would be the very high-value wetlands, swamps and riparian corridors.

8. One of the greatest potential impacts of conventional timber harvesting on coastal grizzly bear habitat is the succession of harvested areas to closed-canopy second-growth, usually within 20-30 years after harvesting.

   The cover and diversity of understorey plant species can decline to a point where grizzly bear food production is minimal at best.

   Current silviculture practices, including intensive vegetation management, are dramatically speeding up the succession to closed-canopy second growth on the coast.

9. In a broader context, altering the unique attributes of the Khutzeymateen and subjecting grizzly bears to the risks mentioned above, jeopardizes the long-term viability of the grizzly bear kill-free zone in north-coastal British Columbia.

Specific impacts

The clearcutting proposed in this scenario would significantly impact the highest-use grizzly bear habitat in the valley, despite the withdrawals of much of this habitat from the harvesting plan.

For example, under this scenario:

- 18 per cent of the very high and 20 per cent of the high-value season 2 habitat would be unusable under this scenario;
- 11 per cent of the very high season 3 habitat, largely made up of areas where bears are in close proximity to spawning salmon, would be harvested; and,
- assuming that clearcutting would be followed by conventional silviculture, these high-use stands would remain unproductive for grizzly bears for the majority of the rotation, 80-100 years.

The loss of this productive grizzly bear habitat would:

- reduce the capability of the watershed to support grizzlies; and,
- concentrate grizzly bears in remaining habitats.

Both impacts would likely result in a reduction in the number of bears using the valley.

Impacts of proposed road development

Approximately three per cent of the Khutzeymateen would be directly influenced (either directly roaded or within an 80-metre buffer) by roads.

Grizzly bears may be displaced from the area due to the influence of roads, depending on the amount of traffic and the degree to which bears become habituated to it.

Previous studies have indicated that the bears that are most likely to habituate to road traffic are females with cubs.

Therefore, if roads do not displace grizzly bears in the Khutzeymateen, adult females and their cubs will be susceptible to traffic fatalities and vulnerable to the direct human impacts mentioned earlier.

Timber harvesting economics

Total timber harvesting costs to Vancouver, including present (January - March, 1992) stumpage rates, were estimated at $68.78 per cubic metres. Estimated revenue at today's prices is $66.45 per cubic metre.

Therefore, excluding any log exports, it appears that this timber harvesting scenario would be marginally unprofitable under existing market conditions.

Log values will increase with improvement in economic conditions and an efficient forest operator could achieve costs lower than estimated.

The economic viability of this scenario could be substantially better in the future.

The timber in the Khutzeymateen reprents approximately three per cent allowable annual cut of the North Coast timber supply area.

This represents approximately 10 forest jobs and an additional 15-20 mill jobs, mostly in the lower mainland.

5.0 Conclusion

The Khutzeymateen steering and management committees conclude that timber harvesting in the Khutzeymateen will result in unacceptable impacts on grizzly bears.

Specific conclusions are as follows:

1. Existing grizzly bear habitat values in the Khutzeymateen play a critical role in the management of grizzly bear populations in north-coastal British Columbia.

2. Forestry development in the Khutzeymateen will result in an immediate and long-term reduction in the capability of the habitat to support grizzly bears.

   This will result in a reduction in the number of grizzlies using the project area. The extent of that reduction is unknown.

3. Forestry development will also place grizzly bears at increased risk of direct mortality as a result of the increased presence and activity of man in the valley.

   The extent of that mortality is again unknown but it could be substantial, based on historical precedents.

4. Large no-hunting grizzly bear reserves with a protected habitat core are necessary to ensure future populations of grizzly bears.

   In north coastal British Columbia options for a protected habitat core are few.

   The Khutzeymateen appears to be the best candidate.

Appendix 1

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